

Name: \_\_\_\_\_

### at1118paper: Complete the Square (v415)

#### Example

By completing the square, find both solutions to the given equation:

$$x^2 - 26x = -153$$

Add  $\left(\frac{-26}{2}\right)^2$ , which equals 169, to both sides of the equation.

$$x^2 - 26x + 169 = 16$$

Factor the left side.

$$(x - 13)^2 = 16$$

Undo the squaring. We need to consider both  $\pm\sqrt{16}$ .

$$x - 13 = -4$$

$$x = -17$$

or

or

$$x - 13 = 4$$

$$x = -9$$

#### Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 40x = -396$$

#### Question 2

By completing the square, find both solutions to the given equation:

$$x^2 - 44x = 2117$$

**Question 3**

By completing the square, find both solutions to the given equation:

$$x^2 + 52x = -235$$

**Question 4**

By completing the square, find both solutions to the given equation:

$$x^2 + 16x = -63$$

**Question 5**

By completing the square, find both solutions to the given equation:

$$x^2 + 42x = -360$$

**Question 6**

By completing the square, find both solutions to the given equation:

$$x^2 - 22x = -96$$